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## Challenging Transformation's Clichés

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# CHALLENGING TRANSFORMATION'S CLICHÉS

**Antulio J. Echevarria II**

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## FOREWORD

Most of the ideas underpinning the foundation of American defense policy and military strategy today were once new and untested concepts at the edge of strategic thought. Critical thinkers had to analyze and refine those ideas so the defense community could apply them in strategy and force development. This is an ongoing process: new ideas emerge, are tested, and adopted, revised, or discarded.

To aid the process of identifying and examining new ideas and concepts, the Strategic Studies Institute publishes a special series called “Advancing Strategic Thought.” This series offers a forum for putting forth original and innovative concepts and perspectives concerning national security policy and military strategy. Yet, it also challenges accepted notions which might have become part of the foundation of American defense policy a bit too quickly. All of this is done, again, in the interest of advancing strategic thought.

The following monograph by Dr. Antulio J. Echevarria II challenges some of the accepted notions that have become foundational to contemporary theories of military transformation. The larger point in Dr. Echevarria’s view is that any endeavor as resource-intensive as military transformation is too important to rest on uncontested truths.

The Strategic Studies Institute is pleased to offer this analytical study as part of its series dedicated to advancing strategic thought.



DOUGLAS C. LOVELACE, JR.

Director

Strategic Studies Institute

## BIOGRAPHICAL SKETCH OF THE AUTHOR

Antulio J. Echevarria II is currently assigned as the Director of Research and the Director of National Security Affairs. He graduated from the U.S. Military Academy in 1981, was commissioned as an armor officer, and has held a variety of command and staff assignments in Germany and Continental United States. Dr. Echevarria is the author of *After Clausewitz: German Military Thinkers before the Great War*, the University Press of Kansas (2001), *Clausewitz and Contemporary War*, the University of Oxford (forthcoming 2007), and *Imagining Future War*, Praeger (forthcoming 2007). He also has published articles in a number of scholarly and professional journals to include the *Journal of Military History*, *War in History*, *War & Society*, the *Journal of Strategic Studies*, *Parameters*, *Joint Force Quarterly*, *Military Review*, and *Airpower Journal*. Dr. Echevarria is a graduate of the U.S. Army's Command and General Staff College and the U.S. Army War College, and holds M.A. and Ph.D. degrees in History from Princeton University.

## SUMMARY

Much of the dialogue concerning military transformation in the United States employs a number of popular, but hitherto unchallenged clichés. Clichés and catchwords are merely handy ways of capturing and conveying truths. Unsubstantiated clichés, however, can masquerade as truths and, unless exposed in time, ultimately prove costly and harmful to policy. This monograph examines five of the more popular clichés, or myths, found in transformation literature today. The fact that they continue to gain currency in the dialogue suggests that we need to examine our accepted truths more regularly.

The first cliché is that military transformation is about changing to be better prepared for *the* future, as if we could somehow separate the future from our current agendas, and as if we had only one future for which to prepare. In fact, transformation is more about the present than the future. Our views of the future are just as distorted by our biases and perspectives as are our views of the past or present. If forecasting the future is always affected by the present, the influences of the present are not always bad. Without biases, much of the information we receive would remain unintelligible. What we need, then, are the means and the willingness to recognize our biases, and to test them – to filter our filters.

The second cliché is that strategic uncertainty is greater today than it was during the Cold War. Unfortunately, this view overstates the amount of certainty that existed then and exaggerates the level of uncertainty in evidence today. We should not forget the amount of uncertainty that clouded conflicts in Korea, Indochina, the Middle East, and northern Africa, as well

as the invasion of Hungary in 1956, the Cuban missile crisis of 1963, the Munich crisis of 1972, the Suez crisis of 1973, and the many tense moments that attended the collapse of the Soviet Union. Today's uncertainty may be qualitatively different, but it is hardly greater than that which obtained during the Cold War. Moreover, we actually know a great deal about today's threats, especially that of transnational terrorism; many recent works have added, and continue to add, to our wealth of knowledge about terrorism and specific terrorist groups. We know the demographics of these groups; their pathologies; the values they hold; their goals; the conditions they need for success; their sources of support; their methods, even though they continue to change; and in many cases, their structures and inner-workings, even though the experts themselves do not always agree.

The third cliché is that mental transformation is the most difficult part of any effort to change. Actually, the most difficult part of transformation is the complex task of managing the change itself. The ideas behind Gustavus Adolphus' reform of the Swedish military during the 17th century—which included mobile artillery and greater use of musketry—were not hard to grasp. Likewise, Napoleon's tactical and operational innovations—which involved combining mass and firepower with self-sufficient army organizations called corps—were not difficult to understand. In fact, the truly hard part about change is *managing* the change. That requires backing up vague visions and lofty goals with concrete programs that can provide meaningful resources for new roles and functions, and offering incentives or compensation packages capable of appeasing institutional interests, especially the specific interests of those groups or communities most threatened by change.

The fourth cliché is that imagination and creative thinking are critical for any successful transformation. While these qualities certainly are important, they are only vital when the effort is open-ended, or in its early stages. Once the transformation effort gains momentum, a new orthodoxy replaces the old one, and creative thinking, unless it remains “in the box,” becomes inconvenient. To be sure, creative thinking can generate a wealth of potential solutions to the practical problems and the incidental friction that come with implementing change. However, the next step, the critical analysis of those solutions, is essential to moving forward. In short, the only truly essential key to transforming successfully is the capacity for critical analysis, which enables us to challenge clichés and assumptions, to expose vacuous theories and seductive jargon, and, in theory at least, to assess the results of war games and other exercises impartially.

Finally, the last cliché is that militaries tend to transform slowly, or not at all, because they like to “refight the last war,” rather than preparing for the next one. While militaries tend to rely on historical models almost to a fault, organizations need to learn from their experiences. An organization that cannot, or will not, learn from its past is not likely to prepare itself very well for the future either, except by chance. Assessing what worked and what did not from historical data is integral to critical analysis. Learning from the past and preparing for the future require an ability to evaluate events as rigorously and objectively as possible.

Admittedly, readers easily can find more than five such catchwords or myths running through today’s transformation literature. However, the purpose here is not to address every particular cliché, but rather to point out the need to challenge accepted “truths.”





## CHALLENGING TRANSFORMATION'S CLICHÉS

Much of the literature concerning military transformation in the United States employs a number of popular, but hitherto unchallenged clichés. Unfortunately, when phrases are repeated frequently enough, they begin to sound true. In policy circles, where haste often is by necessity the order of the day, that poor basis can suffice to justify any number of decisions. Clichés and catchwords are merely handy ways of capturing and conveying truths; they may reveal a lack of imagination on the part of the user, but they are hardly dangerous. Unsubstantiated clichés, however, are another matter. They can masquerade as truths and, unless exposed in time, ultimately prove costly and harmful to policy. This monograph examines five of the more popular clichés, or myths, found in transformation literature today, and argues that they are baseless.<sup>1</sup> Only by regularly challenging the many expressions we take for granted can we avoid wasting ever-scarce resources, and keep our military transformation on course.

The first cliché is that military transformation is about changing to be better prepared for *the* future, as if we could somehow separate the future from our current agendas, and as if we had only one future for which to prepare. In fact, transformation is more about the present than the future. In effect, there are as many “futures” as there are forecasts, and all are powerfully influenced by the present. The second cliché is that strategic uncertainty is greater today than it was during the Cold War. Unfortunately, this view overstates the level of certainty that existed then overstates while also exaggerating the amount of uncertainty in evidence today. The third cliché is

that mental transformation is the most difficult part of any effort to change. Actually, the most difficult part of transformation is the complex task of managing the change itself. The fourth cliché is that imagination and creative thinking are critical for any successful transformation. While these qualities are certainly important, they are only vital when the effort is open-ended, or in its early stages. Once the transformation effort gains momentum, a new orthodoxy replaces the old one, and creative thinking, unless it remains “in the box,” becomes inconvenient. The only truly essential key to transforming successfully is the capacity for critical analysis. The last cliché is that militaries tend to transform slowly, or not at all, because they like to “refight the last war,” rather than preparing for the next one. While militaries tend to rely on historical models almost to a fault, organizations need to learn from their experiences; this is particularly true of organizations that lay claim to the status of professions. Such organizations, according to current theory, must cultivate a corpus of knowledge, usually historically derived, which the members of the profession must master to qualify as professionals.<sup>2</sup>

The remainder of this monograph will address each of the five clichés in more detail. To be sure, readers easily can find more than five such catchwords or myths running through today’s transformation literature. However, the aim here is not to address every particular cliché, which would make for a very lengthy work indeed, but rather to point out the need to challenge accepted “truths.”

## **Transformation and the Future.**

As previously mentioned, the first unchallenged cliché is that defense transformation is about changing

military organizations in anticipation of *the* future. Actually, any effort to transform an organization, whether military or civilian, is less about the future than the present. We can only imagine tomorrow through the lenses we have available today; thus, the future is just as distorted by our biases and perspectives as is the past or the present. In effect, the future is always plural, never singular. To forecast about the future is, of course, to speculate, and speculation is demonstrably more art than science.<sup>3</sup> To be sure, futurists often try to cast their predictions within a scientific framework.<sup>4</sup> The well-known works of Alvin and Heidi Toffler attempted to do that by basing their forecasts on an economically deterministic interpretation of history, as if the complexity of human intellectual, cultural, and political history could fit into such a limited framework.<sup>5</sup>

While continuities certainly exist linking the past and the future, the future is not obligated to behave like the past. Hence, the past does not provide a reliable basis for predicting the future. Just as any painter can turn a blank canvas into a unique painting, so any forecaster can predict a unique future. Each future will depend, as it must, on the tools, skills, and biases of the individual forecasters. It is no secret that many defense forecasts deliberately render the future in a particular way, either to make a case for a specific theory or weapon system, or to undermine the rationale for a competing one. Of course, not all forecasts are intentionally self-serving. But, all are more or less biased.

The operational forecasts sponsored by each of the services in the 1990s, when talk of a possible revolution in military affairs was gaining momentum, are a case in point.<sup>6</sup> The U.S. Army's reports of that time focused on the threats land power would likely face in 20-30 years,

and the capabilities needed to meet them.<sup>7</sup> Likewise, the U.S. Air Force and U.S. Navy published similar studies addressing the unfolding security environment from the standpoint of their respective domains of concern.<sup>8</sup> In fact, it should not surprise us to see such studies and their follow-on reports markedly influenced by service perspectives; after all, each of the services has an obligation to prepare for the future, and it needs to project its roles and missions in order to do so. Moreover, in each of the above cases, the services' research and experimentation efforts led to the development of new concepts. Whether those efforts went as far as they might have is another matter. Still, the point is that the future, per se, does not exist, except through the perspectives available to us in the present. That means, again, that there are many futures, not one, and they are more about what is, than what will be.

If forecasting the future always is affected by the present, the influences of the present are not always bad. They are the lenses through which we perceive and make sense of the world. Our biases accrue over the course of years of decisionmaking and value tradeoffs. They usually are considered negative, but they have a positive side: they assist in screening information, filtering and interpreting it. Without biases, much of the information we receive would remain unintelligible. What we need, then, are the means and the willingness to recognize our biases, and to test them—to filter the filters, so to speak.

Although forecasts of the future always are biased, they still can have considerable value. Even service forecasts, parochial as they may be, often highlight legitimate concerns. Even before the transformation of the American military began, the U.S. Army and U.S. Marine Corps rightly were concerned about their

tooth-to-tail ratio and combat in urban environments, and still are; the U.S. Navy and U.S. Air Force were correct to point out the rising trend toward anti-access weaponry. Similarly, the threats of nuclear, biological, and chemical terrorism described in other studies underscore legitimate security concerns, even if these threats are sometimes inflated, and even if the stockpiles of such weapons actually have declined overall.<sup>9</sup> The threat of infectious diseases also remains valid.<sup>10</sup> Naturally, each report tends to portray its particular threat, or set of threats, as the most urgent. Policymakers are then left to assess the various studies, weigh their findings against those of other sources, prioritize the many legitimate dangers they forecast, and determine how to address them. The task is difficult, to be sure, but not impossible. Yet, the decisions that result will take place in the present and will thus be influenced by today's circumstances, rather than tomorrow's. Trends analysis has its advantages, but also its disadvantages; today's futures are not necessarily tomorrow's.<sup>11</sup>

If addressing such "forecasted" futures is problematic, dealing with "un-forecasted" ones is even worse. A study recently published by the U.S. National Intelligence Council illustrates the point; it posits four "forecasted" alternative worlds: a "Davos world," in which Asia emerges as a principal economic player; "Pax Americana," where the United States takes a multilateral approach to security; a "New Caliphate," in which radical religious-political movements continue to challenge Western norms and values; and a "Cycle of Fear," where security measures become more intrusive in response to the increasing proliferation of weapons of mass destruction.<sup>12</sup> Notably, these scenarios are not mutually exclusive: combinations of two or more of them certainly are possible. Yet, it also is possible

that none of them will occur. The point is that the future may well turn out to be entirely different from anything forecasted. This is particularly true when we remember that other actors, our adversaries among them, are envisioning futures of their own. If the past and the present are worth fighting for, surely the future is. To be sure, many of the decisions we make today will contribute to shaping our future. Still, the same can be said of the decisions of our antagonists, who, naturally, will seek to advance their own interests. Put differently, the range of futures we forecast today will change not only because of what we do, or neglect to do, now, but also because of what others do, or do not do. Truly, the future may not be ours to see. Indeed, it may not be ours at all.

### **Strategic Uncertainties, Yesterday and Today.**

The second oft-repeated and gravely misleading cliché is that strategic uncertainty is greater now than during the Cold War.<sup>13</sup> This assertion is evidence either of a relatively short memory, or of a reluctance to abandon the so-called comfortable, if incomplete, paradigm of a now faded bipolar world. We should not forget the amount of uncertainty that clouded conflicts in Korea, Indochina, the Middle East, and northern Africa, as well as the invasion of Hungary in 1956, the Cuban missile crisis of 1963, the Munich crisis of 1972, the Suez crisis of 1973, and the many tense moments that attended the collapse of the Soviet Union. Today's uncertainty may be different qualitatively, but we hardly can maintain that it is greater than that which obtained during the Cold War.

We should also not forget that the threat of nuclear annihilation loomed large during this time, and

profoundly affected every aspect of strategic thinking.<sup>14</sup> The famed strategist and historian Bernard Brodie, for instance, advanced the view that nuclear weapons had brought about a revolution in strategy, one in which the avoidance of armed conflict or, failing that, its containment, were practically the only permissible objectives.<sup>15</sup> Even small conflicts posed a threat of escalating. Deterrence theory, which relies on the threat of punishment or of denial, practically was elevated to a science in academic circles. Yet, its underlying and inevitable uncertainty is how believable one's threats are to the other side. That question always has been difficult to answer. Interestingly, not all scientists and strategists—most notably, the physicist Herman Kahn, who claimed to have had the highest IQ in American history to that point—thought a nuclear war necessarily had to be avoided.<sup>16</sup> Brodie's view thus was not accepted by all. So this debate added another dimension to the uncertainty that characterized strategic thinking during the Cold War. What seems conventional wisdom now—the idea that a nuclear war would be suicidal—actually was contested then. In short, because we know the outcome of the Cold War, we find it easier to believe the degree of uncertainty that existed during it somehow was less than it probably was.

Moreover, this assertion ignores how much we actually know about today's threats. We need not go as far as those who have mapped out neatly all the faults and fissures of the contemporary world.<sup>17</sup> Yet, we sell ourselves short if we do not acknowledge what we do know. The word most often used to capture the uncertainty of contemporary threats is "asymmetric."<sup>18</sup> Unfortunately, that term probably has done more to obscure the nature of those threats than to illuminate



them.<sup>19</sup> In fact, throughout history, every conflict has been more asymmetrical than symmetrical. One could easily argue that symmetry itself never exists in practice. We can categorize asymmetries in terms of kind or in terms of degree. The hoplite wars of ancient Greece, for instance, would appear, on the surface at least, to have been about as symmetrical as it is possible to be. Yet, closer examination reveals the numbers engaged on each side were rarely the same; the leadership and training almost never were equal; and the geographic positions, strength of economies, and the number and value of allies almost always were uneven.<sup>20</sup> All of these factors matter; some of them matter enormously.<sup>21</sup>

Disparities in numbers, training, and leadership are asymmetries of degree. Fundamental differences in military strategy, types of weapons, or sources of strength—Sparta was clearly a land power and Athens a naval power—are examples of asymmetries of kind.<sup>22</sup> Distinguishing between asymmetries of degree or of kind helps to demystify the term by providing a simple, but viable, framework for understanding the types of differences and their significance. Yet, it also shows that asymmetrical wars are the rule, rather than the exception. Asymmetries of kind may appear, at first, to be more decisive, and thus more important, than those of degree; indeed, some would argue the term asymmetry should only be applied to a major difference in kind. However, asymmetries of kind are not necessarily more important or decisive than those of degree. Superiority of numbers, an asymmetry of degree, helped a Theban army overcome a Spartan one at the battle of Leuctra (371 BC), and changed the regional balance of power in ancient Greece, at least for a time. Also, it is rarely a single asymmetry, but rather a combination of them—such as strategy, leadership, resources—which proves key.

As for today's threats, we actually know a great deal about them, especially two of the most significant ones, violent Islamic extremism and so-called "failed" or "failing states." The former has been under serious study for some time. Recent works by Peter Bergen, Marc Sageman, Michael Scheuer, Bruce Hoffman, Stephen Ulph, and many others, have added, and continue to add, to our wealth of knowledge.<sup>23</sup> To this list, we must include the many classified reports which also have contributed to our knowledge of terrorism, and of specific terrorist groups. We know the demographics of these groups; their pathologies; the values they hold; their goals; the conditions they need for success; their sources of support; their methods, even though they continue to change; and, in many cases, their structures and inner-workings, even though the experts themselves do not always agree.<sup>24</sup> Higher levels of knowledge appreciate conflicting points of view, and seek to fit those views together into a larger mosaic.

As for the second threat, failed and failing states, we also know a fair amount about what causes states to fail and the dangers they pose.<sup>25</sup> We know which states are failing, or already have failed. Intelligence organizations have methodologies for assessing failed states, while publications, such as *Foreign Policy* magazine, offer open-source indices of some 60 "failed" or "failing" states.<sup>26</sup> The principal metrics for *Foreign Policy's* indices include: mounting demographic pressures, refugees and displaced persons, groups with major grievances, chronic human flight, uneven economic development; severe economic decline, delegitimization of the state, deterioration of public services, widespread violation of human rights, status of security apparatus as "state within a state," rise of factionalized elites, and

interventions by other states or external actors.<sup>27</sup> To be sure, the term “failed state” itself is controversial, and often is exploited for political purposes.<sup>28</sup> We also can debate whether the factors listed above are sufficient, or even appropriate. Yet the point is, regardless of the terms and factors we choose, we know a lot more than the rhetoric about uncertainty admits. It is not difficult to identify the world’s trouble spots, or to point out dangerous global trends, which might well warrant political, economic, and, possibly military action. This is not to say that unexpected events will not happen: they will. But that always has been true.

The assertion that uncertainty is higher today than during the Cold War also exaggerates how much we knew about the Soviet bloc. The most glaring oversight, of course, was that the intelligence community failed to predict the economic collapse of the Soviet Union.<sup>29</sup> This oversight, as analysts have pointed out, was nothing short of historical in magnitude.<sup>30</sup> Fortunately, it did not impact negatively on the West, with the exception perhaps on the confidence and credibility of its intelligence community. The assumption also overlooks the fact that knowledge is cumulative, albeit not linearly. In other words, what we knew about the Soviet Union in the early years of the Cold War was considerably less than what we knew about it in the conflict’s final years. We gathered information, assessed it, threw out some, and build on the remainder. So, by the end of the Cold War, we had a picture, if a fluid and dynamic one, of our chief adversary and its partners.

The same is true in this post-Cold War, information-age, globalized environment. We entertained a great many speculations in the years just following the collapse of the Soviet Union about how the world might look in the “future.” In the decade and a half

since then, we acquired enough information to discard some of those, and to focus our efforts more efficiently on the rest, and indeed to add forecasts to fill-in some of the gaps that have existed. As a result, the view that the present security environment is much more uncertain than that which existed during the Cold War is untenable.

### **Mental Transformation.**

The third cliché is that mental transformation is the most difficult part of any major organizational change. Getting people to think differently is considered widely to be essential to any revolution. It also is supposed to lead to greater returns. We often hear that, “Changing the way people think about their work will yield better results.”<sup>31</sup> Unfortunately, this myth gained a great deal of currency early in the dialogue about transformation, or the revolution in military affairs as it was called until shortly after September 11, 2001 (9/11). To take the second issue first, the idea that changing the way people think about their work will lead to better results is questionable at best. Change does not necessarily yield better results. In general, change will lead to one of two outcomes: better output, or worse. (No change in output is rare, and usually means the relevant variables were not altered, or the metrics were insufficient to capture minor results.) So, any change has, in effect, a 50-50 chance of producing better results. We can take measures to try to tip the balance in favor of producing positive results. However, when we look at changes, such as military reforms, in the aggregate, we see that, in general, for every successful military reform, there is an unsuccessful one. The reforms implemented by the Russian army between the Crimean War and the

Great War, for instance, illustrate the point; sometimes change was successful, and other times not.<sup>32</sup> Part of the problem is that military reforms, especially, always are relative to those undertaken by the competition. In truth, some combination of positive and negative outcomes is usually the result of efforts to transform: for a variety of reasons, not the least of which stem from the complexity of the organizations involved, some areas improve, while others decline. Progress depends on whether the former outweigh the latter.

More importantly, grasping new ideas is hardly the most difficult part of any transformation. The ideas behind Gustavus Adolphus' reform of the Swedish military during the 17th century—which included mobile artillery and greater use of musketry—were not hard to grasp.<sup>33</sup> Likewise, Napoleon's tactical and operational innovations—which involved combining mass and firepower with self-sufficient army organizations called corps—were not difficult to understand.<sup>34</sup> Nor were the concepts implemented by the German military—which stressed speed of movement and decentralized decisionmaking—difficult to comprehend.<sup>35</sup>

On the contrary, if organizations appear reluctant to embrace new ideas, the fault might lie with the basic ideas themselves. Proponents of change are not immune to seductive, but ultimately vacuous, theories or jargon. The notions of Network Centric Warfare, Rapid Decisive Operations, and Effects-based Operations have seduced many in the defense community, and the last is working its way steadily into official doctrine. Similarly, within the business community, the rage of the 1990s was to transform to become more networked, flatter, and more agile and flexible. Hierarchies and stovepipes were to be demolished, and a premium

was to be put on lateral information sharing. Such changes were to enable companies to “self-organize” in innovative ways to accomplish tasks more effectively, and more efficiently. However, recent observations show that “many companies which were once models of revolutionary change have come to grief: Enron, WorldCom, Vivendi, AOL Time Warner, Qwest, Global Crossing, Sunbeam, British Telecom, Marconi, Tyco, and AT&T.”<sup>36</sup> While the reasons for failure vary, accepting “digital jargon” or buying into what might be called a “cult of change” without rigorous, critical analyses were common factors. To be sure, many other companies transformed successfully during this period. However, the point is that it might well pay to examine the emperor’s new clothes closely before deciding to change one’s fashion line.

In fact, the truly hard part about change is *managing* the change. That requires backing up vague visions and lofty goals with concrete programs that can provide meaningful resources for new roles and functions, and offering incentives or compensation packages capable of appeasing institutional interests, especially the specific interests of those groups or communities most threatened by change. Irrespective of the core ideas involved, transformation efforts, whatever their stripe, often are perceived as organizational “trade-offs,” which invariably mean certain groups and assets are to be “traded,” or “right-sized,” out of the program. Some social scientists argue, along similar lines, that the most challenging impediments to change are institutional interests, such as the tendency to maximize one’s budget, and the desire to maintain prestige, autonomy, and identity.<sup>37</sup> Some scholars suggest that building supportive constituencies among senior officers and creating promotion paths for younger, innovative

officers would help overcome such impediments and facilitate military transformation.<sup>38</sup> One analyst even went so far as to assert, wrongly, that, before World War II, “The German army told a group of lieutenant colonels and colonels that, in effect, they could not be promoted *unless* they came up with [a concept] that broke current doctrine.”<sup>39</sup> However, using promotion as a tool to implement change runs the risk of politicizing an officer corps, increasing factionalism within an organization, and generating more resistance to the transformation effort overall. Constituencies, or schools of thought, already exist in most military organizations in any case; ideas are only as successful as the proponents supporting them are powerful. The literature on managing organizational change is simply too voluminous to discuss here. Suffice it to say that the task of managing change is more difficult than getting new ideas accepted. In any case, mental transformation is at root part of managing change, not an ideational or cognitive challenge.

Part of the problem with mental transformation is that those charged with selling the change often transmit conflicting messages. The first message is that the transformation effort is open to creative ideas and innovation. Ostensibly, the aim is to promote a culture “that rewards unconventional thinking—a climate where people have freedom and flexibility to take risks and try new things.”<sup>40</sup> However, that message typically conflicts with a second one, which is that change must occur quickly in order for the organization to remain competitive; it cannot afford to fall behind the transition from the industrial to the information age. Military transformation, in particular, is upheld as “an imperative for the security environment of the information age and globalization . . . either you buy

transformation or you buy irrelevance.”<sup>41</sup> The message that such rhetoric sends is that every member of the organization ought to get on board quickly with the purpose and direction of the new vision for the organization. Yet, placing emphasis on rapid change means sacrificing any number of creative ideas, all of which require time to emerge, unless they happen to coincide with where the organization’s leaders already want it to go. Instead of fostering “out-of-the-box” thinking, they merely are replacing the previous box with another one.

Transformations may well involve a certain “battle of ideas,” wherein those with a stake in the future engage in debates about where the organization is headed and what it needs to do to get there. Such debates were clearly in evidence in the years leading up to World War I, and again in the decades before World War II. Before 1914, army officers debated the best techniques for crossing the ever-expanding deadly zone, as well as the tactical and strategic roles of aircraft; naval officers discussed how best to address the submarine and air threats, among other things.<sup>42</sup> During the 1920s and 1930s, officers of all services debated the potential and limits of mechanized forces and airpower, with various schools of thought emerging.<sup>43</sup> The conventional wisdom holds that debates of this sort are beneficial, since they allow for ideas to emerge which otherwise might not.

However, for any transformation effort debates fundamentally are problematic. Managers need to erase doubt about change, not heighten it, and debates generally raise more questions than answers. Managers need to bring fence-sitters onto their side. They need converts, not critics. Typically, those responsible for choosing to pursue transformation want it to happen



on their terms; they may have a stake in a certain theory, such as Effects-Based Operations, or a particular outcome, such as a smaller, more efficient military force. Whatever the reason, they need to build momentum, and to do that they require consensus, or at least tacit consent. So, debates can become inconvenient quickly. Consequently, war games, experiments, and research in general soon become one-sided, lest they expose flaws in the overall vision, its goals, or its underlying assumptions, and thus impede progress.<sup>44</sup>

One way to deal with such criticisms is to discredit them, to label them “backward-looking,” entrenched, or fearful of change: they do “not understand transformation,” and “they just don’t get it” are phrases commonly heard.<sup>45</sup> This tactic obviously is much cheaper, at least in the short-run, than addressing whatever problems critics might raise. In truth, while such tactics might appear short-sighted, this essentially is how the game is played, though it is rarely a zero-sum game. As one historical study reveals, the carrier revolution took place in the U.S. Navy before the battleship-centric theory was discredited.<sup>46</sup> In any case, we should not forget that naval gunfire, delivered by battleships and other vessels, played a key role in the island-hopping campaigns of the Pacific. Decommissioning battleships would thus have been a mistake.

The German military between the wars, which has long been something of a model for transformation advocates, had at least four different schools of thought: the maneuver school, promoted by Hans von Seeckt and others who believed mobility was the key to fighting a potential war on two fronts; the defensive school, which held that World War I had demonstrated the insuperable power of the defense; the

psychological school, which believed that intangibles, such as courage and morale, were the most important elements of modern combat; and the Peoples' war school, which argued that modern war had broken down distinctions between soldiers and civilians, and guerrilla tactics ought thus to be the order of the day.<sup>47</sup> The debate essentially was resolved in favor of the maneuver school when Hitler came to power; he needed a military capable of achieving rapid victories in order to pursue his policy of expansion. His strategic agenda thus provided the imperative that pushed the German army's transformation in a specific direction.

Depending on the nature of the transformation, the stakes for some key managers may be very high indeed. As all academics know, debates can drag on unresolved for years, if not decades. Some are only resolved by seismic events, such as the collapse of the Soviet Union, which discredited the Marxist school. However, policymakers rarely have the luxury of time. Due to election or funding cycles, changes are sometimes implemented or rejected before they are fully thought through.<sup>48</sup> That may be one of the reasons military reforms rarely live up to expectations. If war is an expression of politics, so is the preparation for war.

### **Creative Thinking and Transformation.**

The fourth cliché, which is closely related to the previous one, is that imaginative and creative thinking are essential to any major transformation effort.<sup>49</sup> Imagination and "thinking outside the box" often are touted as keys to success, as if the more creative the idea, the more successful the transformation is likely to be. As we have seen, creativity is less important to leaders of transformation than obtaining consensus. Yet, that

does not rule out the possibility that the transformation effort overall might depend to some extent on the capacity to develop imaginative solutions. Every transforming organization will encounter obstacles and other problems. Presumably, how it resolves those problems will in large measure determine whether its efforts to change will succeed. In problem-solving, in fact, critical analysis, rather than imaginative or creative thinking, is the most important ingredient for success.

To be sure, creative thinking can generate a wealth of potential solutions to the practical problems and the incidental friction that come with implementing change. However, the next step, the critical analysis of those solutions, the examination of their feasibility, is essential to moving forward. Science-fiction writer and futurist H. G. Wells was as imaginative a mind as one was likely to find in Edwardian England. His short story, "The Land Ironclads," published in 1903, has been hailed by many as an almost prophetic solution to the tactical stalemate that would vex military leaders during World War I.<sup>50</sup>

However, Wells' ironclads were utterly impractical. They were monstrous trench-busters, "something between a big blockhouse and a giant's dish cover," rather than the more familiar box-like tanks of World War I, or the speedier ones of World War II.<sup>51</sup> The tanks of World War II weighed from 5 to 70 tons, were 10 to 20 feet long, and had a speed of 10 to 30 miles per hour. In contrast, each of Wells' ironclads was between 80 to 100 feet long, about 10 feet high, with 12-inches of iron-plating. These dimensions would have resulted in a vehicle far too heavy to move on land under its own power, even with today's technologies. By comparison, the *USS Monitor*, a floating ironclad commissioned in

1862, displaced about 987 tons. It was 179 feet long, almost 42 feet wide, just over 10 feet high, but only had nine inches of armor at its thickest point (the cylinder-like pilot house).<sup>52</sup> It was thus twice as long as one of Wells' monsters, but similar with respect to the other dimensions; hence, the overall weight of the land ironclad would have been no less than that of the *Monitor*, since the former had much thicker armor all around. In short, the idea alone is never sufficient. Critical thinking is needed to reveal the idea's basic problems, which then might be tackled individually, assuming the state of technology is capable of doing so. Most out-of-the-box ideas, however brilliant, need to return to the box at some point in order to become practical solutions. Even had Wells' idea been pounced on as soon as it appeared, it is not clear, given the propulsion systems then available, that tanks would have made their debut on the battlefields of Europe much sooner than they actually did.

Critical thinking also enables us to challenge clichés and assumptions, to expose vacuous theories and seductive jargon, and, in theory at least, to assess the results of war games and other exercises impartially. The desire to change an organization thoroughly and rapidly can render it vulnerable to seductive theories. The purpose of critical thinking is to strip away the allure. If the development of mechanized warfare in the decades before World War II is considered a military transformation, then it was not creative thinking that mattered, but critical analysis. The central ideas were essentially a return to pre-World War I theories, particularly those of Alfred von Schlieffen, which emphasized continuous movement in order to keep one's opponent off balance, and those of the elder Moltke, who stressed decentralized decisionmaking.

What proved far more valuable than imaginative thinking, therefore, was the culture of critically examining the results of war games and training exercises.<sup>53</sup>

Critical thinking also assists us in identifying signposts, which, in turn, are essential in enabling an organization to hedge its bets about how the future will unfold.<sup>54</sup> Signposts in the form of political, social, and technological developments can indicate whether an organization's assumptions remain valid. They can serve as decision points, which require policymakers to take hedging or shaping actions; the former minimize the damage of failed assumptions, while the latter help us to prevent the assumption from failing in the first place. Preparing for the future is more or less a betting game. As in roulette or other games of chance, we are wagering on the probability that a particular capability, or set of capabilities, will prove useful, perhaps even decisive, in the near or long-term future. We may try to tip the probability in our favor, but the outcome is rarely certain. Compounding the problem is deciding how much of that particular capability to buy.

### **Refighting the Last War.**

The fifth cliché is that militaries are slow to transform because they like to refight the last war rather than preparing for the next one. Actually, many successful transformations occurred as a result of refighting the last war. The German military's famed transformation after World War I has become the model most often used to explain defense transformation in the United States. It is upheld as an example of the superiority of efficiency over mass and of preparing for the next war, rather than the last one. Interestingly, the heart of the German transformation effort involved looking

backward to 1870-71, to tried and true principles. It was, thus, about refighting *not* the last war, but the war *before* the last war. Moreover, the core of the so-called blitzkrieg theory, which long has been associated with this transformation, perhaps erroneously, consisted achieving a breakthrough against strong defensive positions, the single most difficult task of the Great War.<sup>55</sup> Famed panzer general Heinz Guderian reiterated the importance of this task in his book, *Achtung Panzer!*, published in the late 1930s.<sup>56</sup>

To be sure, at some point looking backward prevents looking ahead. Yet, to suggest militaries should not examine the lessons from the last war implies they should not learn from their pasts. History does not necessarily occur in cycles. So, failure to learn from the past does not necessarily condemn one to repeat it, or to fail in the future. Yet, an organization that cannot, or will not, learn from its past is not likely to prepare itself very well for the future either, except by chance. Assessing what worked and what did not from historical data is integral to critical analysis. Learning from the past and preparing for the future require an ability to evaluate events as rigorously and objectively as possible. The study of history, perhaps more than any other discipline, can help develop the requisite critical thinking skills which underpin these abilities.<sup>57</sup>

For this reason, military organizations should not approach history as a holy writ, but as a medium for exercising critical thinking. As military historian and theorist Sir Basil Liddell Hart once said, military professionals tend to regard history as a “sentimental treasure.”<sup>58</sup> Liddell Hart, of course, believed that history—if free of prejudice and equipped with powers of discernment and proportion—could get at the “Truth,” and this should always be its goal, even if that goal is not completely attainable. That belief is

something of a sentimental treasure in its own right. Nonetheless, the point is that dismissing the past is as harmful as trying to relive it.

Despite teeming rhetoric to the contrary, past wars do not always differ substantially from contemporary ones. To be sure, details matter. Yet, even a cursory glance at American military history shows that smaller, “irregular” wars have always been more frequent than larger, conventional ones. Between 1898 and 1914, the United States fought a number of so-called “small wars” in Cuba, Panama, Nicaragua, and Mexico.<sup>59</sup> In the course of those 16 years, though each of these “Banana wars” was obviously different, with unique circumstances and characters, none was exclusively so. American troops did indeed do some fighting, but they performed mostly constabulary duties, such as providing security, distributing food and medicine, building schools and infrastructure, and similar tasks. These duties clearly are more relevant to those that U.S. troops regularly perform in the current war on terror than contemporary military theory likes to admit. For those who insist small wars are the wave of the future, we might well ask how that makes the future any different than the past. Thus, to ignore the experiences of earlier campaigns, such as those mentioned above, is to reject a large and growing body of knowledge. Rather than dismissing the past (or refighting it), militaries need to find better ways to capture, categorize, and access the knowledge they gain from their own experiences, and those of others.

## **Conclusions and Implications.**

Transforming any organization is always more about the present than the future. The future never

exists but in the collective imagination of those in the present, and they hardly can lay claim to a consensus view. The future we imagine can never be any better than the filters through which it must pass. If we want to forecast better futures, we need to look to our filters. A process for filtering our filters ought to become routine.

Transformation also is, ultimately, political in nature. The future is contestable, and as such, it forms part of organizational power struggles that take place in the present. The success of transformative ideas depends to a large extent on the power—physical and psychological—of the personalities who promote them. The intrinsic “soundness” of new ideas may not have more than secondary or tertiary importance. Militarily unsound ideas have been the basis for military transformations more than once in history.

Uncertainty is a given in any age. We will always know less than we want to know. Yet that should not induce us to overlook the quantity and quality of what we do know. Overplaying the uncertainty card can lead to indefensible policy decisions and an inability to prioritize strategy goals. Knowledge and the ability to do something with it are not indisputably linked. Knowing what we need to do to win the “war of ideas” is different from having the ability to do it. Distinguishing what we know from what we want to know may help us spend transformation dollars more wisely.

Critical thinking is far more important to achieving a successful transformation than is creative or imaginative thinking. Consensus, or at least tacit consent, is the lubricant that moves transformation along. Creative thinking takes transformation on side tours, while critical thinking questions whether the



road being traveled is the best one. Creative thinking is best done before the journey begins; critical thinking should occur at every mile marker. The political nature of transformation makes both inconvenient. The unpleasant reality is that funding decisions have to be made, and on time. It is probably best to accept that errors in judgment will be made. But we want to avoid compounding them by refusing to change course.

Learning from the past does not guarantee a better future, but it does improve our ability to learn. Trying to make the present—or the future—fit the past is bound to lead to failure and disappointment. The past is never exactly the same as the present, and it is never absolutely different, either. If and when the past is relevant depends on how we see the present. And that, in turn, depends on how frequently, and how well, we challenge the accepted “truths” of our times.

## ENDNOTES

1. To emphasize: this is not a critique of official policies pertaining to U.S. Defense Transformation. Rather, it is an examination of a few of the many recurring expressions found in discussions of military transformation, or transformation in the business world.

2. Andrew Abbott, *The System of Professions: An Essay in the Division of Expert Labor*, Chicago: Chicago University, 1988; see also Don Snider and Gayle L. Watkins, eds., *The Future of the Army Profession*, New York: McGraw-Hill, 2002.

3. Edward Cornish, *The Study of the Future: An Introduction to the Art and Science of Understanding and Shaping Tomorrow's World*, Washington, DC: World Future Society, 1984.

4. Compare Edward Cornish, *Futuring: The Exploration of the Future*, Bethesda, MD: World Future Society, 2004; Nicholas Rescher, *Predicting the Future: An Introduction to the Theory of Forecasting*, Albany: State University of New York, 1998; Robert Heilbroner, *Visions of the Future: The Distant Past, Yesterday, Today, Tomorrow*, New York: Oxford, 1995.

5. Alvin and Heidi Toffler, "War, Wealth, and a New Era in History," *World Monitor*, May 1991, pp. 46-52; Alvin Toffler, *Third Wave*, New York: Morrow, 1980.

6. Sam J. Tangredi, *All Possible Wars? Toward a Consensus View of the Future Security Environment, 2001-2025*, Washington, DC: National Defense University, 2000, underscores the problems of trying to arrive at a consensus.

7. *Knowledge & Speed, Army After Next Report*, U.S. Army Training and Doctrine Command, 1996; and *Knowledge & Speed II*, 1997.

8. Compare Robert S. Trip, et al., *Enhancing the Effectiveness of Air Expeditionary Forces*, RAND Report, Santa Monica, CA: RAND, May 1997; Pelham G. Boyer and Robert S. Wood, eds., *Strategic Transformation and Naval Power in the 21st Century*, Newport, RI: Naval War College, 1998.

9. Sharon A. Squassoni, "Nuclear, Biological, and Chemical Weapons and Missiles: Status and Trends," Congressional Research Service, Library of Congress, Washington, DC, January 14, 2005; Milton Leitenberg, *Assessing the Biological Weapons and Bioterrorism Threat*, Carlisle Barracks, PA: U.S. Army War College, 2005; Robert J. Einhorn and Michele A. Flournoy, *Protecting Against the Spread of Nuclear, Biological, and Chemical Weapons: An Action Agenda for the Global Partnership*, 4 vols., Washington, DC, 2003.

10. A concern addressed in World Health Organization, *Global Pandemic Influenza Action Plan to Increase Vaccine Supply*, Geneva, Switzerland, 2006.

11. Cornish, "Trend Extrapolation: A Method That Everyone Uses," in *Study of the Future*, pp. 108-111.

12. National Intelligence Council, *Mapping the Global Future: Report of the National Intelligence Council's 2020 Project*, Washington, DC: U.S. Government Printing Office, 2004.

13. John J. Mearsheimer, "Why We Will Soon Miss the Cold War," *The Atlantic Monthly*, Vol. 266, No. 2, August 1990, pp. 35-50; this essay was one of the first, perhaps the first, to make this argument.

14. Colin S. Gray, "Across the Nuclear Divide—Strategic Studies, Past and Present," in *Strategy and History*, London: Routledge, 2006; this essay was published originally in *International Security*, 1977.

15. Bernard Brodie, *The Absolute Weapon*, New York: Harcourt, Brace, 1946.

16. Christopher Coker, "Post-Modern War," *RUSI Journal*, Vol. 143, No. 3, June 1998, p. 9; see Herman Kahn, *On Thermonuclear War*, Princeton: Princeton University, 1960; and *Thinking about the Unthinkable*, New York: Horizon, 1962; Barry Bruce-Briggs, *Supergenius: The Mega-Worlds of Herman Kahn*, New York: North American Polity, 2000; Sharon Ghamari-Tabrizi, *The Worlds of Herman Kahn: The Intuitive Science of Thermonuclear War*, Cambridge: Harvard University, 2005; Louis Menand, "Fat Man: Herman Kahn and the Nuclear Age," *The New Yorker*, June 27, 2005.

17. Thomas P. M. Barnett, *The Pentagon's New Map: War and Peace in the Twenty-first Century*, New York: Berkley, 2005.

18. "International: Asymmetric War Poses New Challenges," *Oxford Analytica*, October 24, 2001, p. 1, is representative.

19. Steven Metz and Douglas V. Johnson II, *Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts*, Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2001, examine uses of the term as it appeared in official documents to that point, and attempt to dispel some of the confusion surrounding the term; they define strategic asymmetry as "the use of some sort of difference to gain an advantage over an adversary," p. 1. I would go one step farther and contend that asymmetry often exists even if we are not consciously using it to gain an advantage; it's almost unavoidable. See also Steven Blank, *Rethinking Asymmetric Threats*, Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2003, which points out how the term can be meaningless for policymakers.

20. Donald Kagan, *The Peloponnesian War*, New York: Viking, 2003.

21. Barry S. Strauss and Josiah Ober, *The Anatomy of Error: Ancient Military Disasters and their Lessons for Modern Strategists*, New York: St. Martin's, 1992.

22. J. F. Lazenby, *The Peloponnesian War: A Military Study*, London: Routledge, 2004; Kagan, *Peloponnesian War*.

23. Peter L. Bergen, *Holy War, Inc: Inside the Secret World of Osama bin Laden*, New York: Touchstone, 2002; Marc Sageman, *Understanding Terror Networks*, Philadelphia: University of Pennsylvania Press, 2004; Michael Scheuer, *Imperial Hubris: Why*

*the West is Losing the War on Terror*, Washington, DC: Brassey's, 2004; and *Through Our Enemies' Eyes: Osama bin Laden, Radical Islam, and the Future of America*, Washington, DC: Potomac, 2006; Bruce Hoffman, "Combating Al Qaeda and the Militant Islamic Threat," Testimony presented to the U.S. House Armed Services Committee, Subcommittee on Terrorism, Unconventional Threats and Capabilities, February 16, 2006.

24. Bob Woodward, "Secret Reports Dispute White House Optimism," *Washington Post*, October 1, 2006, p. A01.

25. The literature is extensive; see Robert I. Rotberg, ed., *When States Fail: Causes and Consequences*, Princeton: Princeton University, 2004; and more recently, Francis Fukuyama, *Nation-Building: Beyond Afghanistan and Iraq*, Baltimore: Johns Hopkins University, 2006.

26. See [www.foreignpolicy.com/story/cms.php?story\\_id=3420](http://www.foreignpolicy.com/story/cms.php?story_id=3420), dated May/June 2006.

27. *Ibid.*

28. One of the most controversial is Noam Chomsky, *Failed States: The Abuse of Power and the Assault on Democracy*, New York: Metropolitan Books, 2006, which argues that the United States itself is actually a failed state.

29. John Lewis Gaddis, *The Cold War: A New History*, New York: Penguin, 2005.

30. As former Director of Central Intelligence Robert Gates remarked in a speech delivered at Texas A&M University on November 19, 1999:

In the economic arena CIA, in its statistical analysis, overstated the size and growth rate of the Soviet economy and relatedly underestimated the burden of military expenditures on that economy and on that society. CIA's statistical analysis of the Soviet economy, while the best available, East or West—and I would have to tell you, we had clandestine reporting to the effect that even Andropov regarded our reporting on the Soviet economy as the best available to him—still in absolute terms, it described a stronger and larger economy than our own interpretive analysis portrayed and that existed in reality.

While in 1987 the CIA allegedly warned of impending collapse, other intelligence agencies disagreed.

31. Steven Donald Smith, "Military Transformation Requires Cultural Change: Interview with Thomas Hone, Office of Force Transformation," U.S. Federal News Service, Washington, DC, June 8, 2006.

32. Bruce W. Menning, *Bayonets before Bullets: The Imperial Russian Army, 1861 and 1914*, Bloomington: Indiana University press, 1992.

33. Michael Roberts, "The Military Revolution 1560-1660," in *War and Society in the Seventeenth Century*, G. N. Clark, ed., Cambridge: Cambridge University, 1958; and *Gustavus Adolphus*, 2nd Ed., New York: Longman, 1992.

34. David Chandler, *The Campaigns of Napoleon*, New York: Macmillan, 1966.

35. James Corum, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform*, Lawrence: University Press of Kansas, 1992.

36. Paul Bracken, "Corporate Disasters: Some Lessons for Transformation," *Joint Force Quarterly*, Vol. 32, Autumn 2002, pp. 83-87, provides a quick summary.

37. Chaim Kaufmann, "Review of Stephen Rosen, *Winning the Next War: Innovation and the Modern Military*," in *The American Political Science Review*, Vol. 86, No. 4, December 1992, p. 1110, asserts that such interests stymied efforts to reform military organizations prior to the Great War.

38. Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military*, Ithaca: Cornell, 1991; Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany between the Wars*, Ithaca: Cornell, 1984.

39. Andrew Ross, Michèle A. Flournoy, Cindy Williams, and David Mosher, "What Do We Mean by 'Transformation'? An Exchange," *Naval War College Review*, Vol. 55, No. 1, Winter 2002, p. 31. This statement appears to have come from a misunderstanding of the role of von Seeckt in the transformation of the German army; for clarification of that role, see Corum, *Roots of Blitzkrieg*.

40. Cited from Robert Holzer, *Transformation Trends*, February 17, 2003, p. 1.

41. "Statement of Arthur K. Cebrowski, Director, Office of Force Transformation, Office of the Secretary of Defense, before the Subcommittee on Terrorism, Unconventional Threats, and

Capabilities, House Armed Services Committee," February 26, 2004; Cf. *Transformation Trends*, March 2, 2004, pp. 1-2. In this case, Admiral Cebrowski's message was aimed at demonstrating Transformation's importance to Congress, and was appropriate. Frequently, however, this and other statements are taken out of context, and directed at critics of Transformation (see endnote 45), implying that those who have not bought into Transformation are themselves irrelevant.

42. Antulio J. Echevarria II, *After Clausewitz: German Military Thinkers before the Great War*, Lawrence: University Press of Kansas, 2000.

43. Robert M. Citino, *Quest for Decisive Victory: From Stalemate to Blitzkrieg in Europe, 1899-1940*, Lawrence: University Press of Kansas, 2002; Corum, *Roots of Blitzkrieg*.

44. One such example is covered in Sean D. Naylor, "War Games Rigged? General says Millennium Challenge '02 'Was Almost Entirely Scripted'," *Army Times*, August 16, 2002; Julian Borger, "War Game Was Fixed to Ensure American Victory, Claims General," *The Guardian*, August 21, 2002.

45. Tom Hone, Assistant Director, Office of Force Transformation, "Understanding Transformation," *Transformation Trends*, January 16, 2004, p. 3, uses the first comment in response to Frederick Kagan's writings criticizing Defense Transformation, particularly one entitled, "A Dangerous Transformation: Donald Rumsfeld Means Business. That's a Problem," published in the *Wall Street Journal*, November 12, 2003; comments similar to the second phrase are used by both sides of the debate and can be found in any number of op-eds.

46. Adam N. Stulberg, "Managing Military Transformations: Agency, Culture, and the U.S. Carrier Revolution," *Strategic Studies*, Vol. 14, No. 3, July-September 2005, p. 489.

47. Corum, *Roots of Blitzkrieg*, pp. 55-67.

48. David A. Fulghum, "Season's Woes: Budget Maneuvers, Unexpected Investigations and Lessons from Iraq Roil Military Transformation Plans," *Aviation Week & Space Technology*, Vol. 159, No. 25, December 22, 2003, p. 26.

49. Larry Seaquist, "Where's Military Creativity?" *Christian Science Monitor*, February 4, 2004, p. 11.

50. H. G. Wells, "The Land Ironclads," *The Strand Magazine*, Vol. 26, December 1903, pp. 501-513.

51. *Ibid.*, p. 505.

52. The *Monitor* had 8" of armor on the turret, 4.5" on the sides, and 2" on the deck.

53. James Corum, "A Clash of Military Cultures: German and French Approaches to Technology between the World Wars," *Tooling for War*, Stephen Chiabotti, ed., Chicago: Imprint Publications, 1996; and "A Comprehensive Approach to Change: Reform in the German Army in the Interwar Period," *The Challenge of Change: Military Institutions and New Realities 1918-1941*, Harold Winton, ed., Lawrence, KS: University Press of Kansas, 2000.

54. James Dewar, Carl Builder, William Hix, and Morlie Levin, *Assumption-Based Planning: A Planning Tool for Very Uncertain Times*, Santa Monica, CA: Rand, 1993.

55. On the dubious origins of the term, see William J. Fanning Jr., "The Origin of the Term 'Blitzkrieg': Another View," *Journal of Military History*, Vol. 61, 1997, pp. 283-302.

56. Heinz Guderian, *Achtung – Panzer! The Development of Armoured Vehicles, Their Tactics and Operational Potential*, Christopher Duffy, trans. New York: Sterling, 1992<1937>, esp. 178-191.

57. Antulio J. Echevarria II, "The Trouble with History," *Parameters*, Vol. 35, No. 2, Summer 2005, pp. 78-90.

58. B. H. Liddell Hart, *Why Don't We Learn from History?* New York: Hawthorn, 1971, 17ff.

59. Max Boot, *The Savage Wars of Peace: Small Wars and the Rise of American Power*, New York: Basic, 2002, pp. 129-55.